RS001

QUALITY ASSURANCE REQUIREMENTS FOR SUPPLIERS

Revision 7

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MODIFICATION CONTROL SHEET

Revision	Date	Modification
--	16/01/2006	**FIRST ISSUE**
1	16/03/2007	Requirement 10 shall be applicable on request. Correct table of appendix A
2	02/02/2011	- Clause to be applicable by Purchase Order req. - First Article Inspection shall be applicable as required by the Purchase Order. - C=0 sampling plans added
3	19/06/2012	- General Spelling Review - Table 1 incorporated in Section 1 - CoC Requirements Review and acceptable traceability. - ECSS-Q-20 applicable to Space Projects
4	1/10/2013	General Revision. Change in the section numbering. §1.3 SW Testing Supplier are included §3.9 Quality Clauses are extended for SW Suppliers and SW Testing Services. §3.11 Wiring Inspection standard is included §2.21 Added Material Security Data Sheet requirement §2.22 Conflict Minerals requirements added §2.21 Added REACH related requirements
5	08/02/2019	General Revision. Other minor changes and orthographic fix. §1.3 Include details to the supplier table and classification of distributors §1.4 Include applicable AQAP 2310 standard §1.5 Fix and update acronyms §2 Update of standards. §2.4 and §2.14 Include right of access to Customer §2.12 Clarification of text. §2.13 Clarification of text and signature. §2.15 Include new text. §2.17 Change of sample method. §2.19 KPIs Information Update. §2.21 Include new standard and Asbestos & SOLAS regulation. §2.22 Include European standard. §2.23 Extraction from previous §2.13 section. §3.1 Requirement update. §3.2 Requirement clarification §3.4 Requirement, concepts and certificate clarification. §3.5 Requirement and certificate clarification. §3.8 New text inclusion for clarification. §3.9 Text update. §3.10 Change of IPC standard. FAI and test coupon requirements clarification. §3.14 Traceability information and signature clarification. §3.14.1 Creation of new sub-section. §3.15 New section.
6	27/09/2023	§ 1 Extension of the Quality Clauses to Group Oesia §1.3 Updated Table 1 § 2.1 Upgraded to Group Oesia § 2.5 Traceability information clarification § 2.9 Change control on critical COTS

		§ 2.12 Latency Problems Warranty § 2.13 Added for clarification Table 2. MSL requirement added. § 2.17 Sampling method modification and clarification § 2.19 Secondary KPI removal § 2.21 Environmental Requirements Update § 2.23 ITAR License Requirement added § 2.24 Counterfeit Material Section added § 3.3 Serial number detail clarification § 3.10 3.11 3.12 Added Class 2 in IPC requirement § 3.10 Clarification added in IPC requirement § 3.13 Added Clarification § 3.14.1 Authorized distributor clarification
7	08/03/2024	§3.16 Added new section

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1. INTRODUCTION

1.1. Quality Assurance Requirements

Group Oesia (GO) is contractually responsible for compliance to specified national quality assurance requirements as AQAP 2110, international as ISO 9001, AS and EN 9100, regulatory requirements as EASA PART 145/21 and customer specific Quality Assurance Requirements.

To comply with these standards, **GO** requires all suppliers to assure the quality of goods, which they supply against purchase orders and the referenced standards.

The commitment of quality requirements and compromise with the Continuous Improvement depends in turn on the level of commitment of these requirements by all their suppliers and their determination with the continuous improvement of the Quality indicators, lead times, cost improvements and process efficiency.

1.2. Purpose

The purpose of this document is to specify the minimum Quality Assurance requirements the suppliers shall comply with to ensure the quality of the purchased product.

This document supports contractual documentation such as Contracts, Purchase Orders (PO), Agreements (SOW), Offers, Specifications, Drawings, Terms and Conditions.

1.3. Scope

SUPPLIERs are responsible for compliance with the requirements of this document are any source, which supplies to the PURCHASER (**GO)** any materials, parts, components, processes or services.

All SUPPLIERS shall comply with the requirements described in Section 1 and 2.

SUPPLIERS holding AQAP 2110, ISO 9001 or AS/EN 9100 series and Aviation Authority approvals are expected to be able to demonstrate their quality management systems are compliant with the relevant approval requirements.

Where no such approvals exist, an organization will be required to demonstrate compliance with the relevant requirements outlined within Section 2.

In addition to the general requirements stated in Section 2, supplier shall fulfil the relevant requirements to be applicable depending on the type of products or services supplied as outlined in the following table:

Supplier Type	Scope	Type of provided products	Relevant Requirements
A. Vendor of own design products and services ("Proprietary").	Design/development, production and servicing	- Processor Boards "COTS" - Components "COTS" - Proprietary Software	**2**
B. Vendor produced products to the PURCHASER design / specifications (BTP, BTS)			

B.0 Optical Components and Mechanical Parts	Automatic manufacturing Processes	- Machined and Sheet Parts - Electronics and optical Components	**3.1, 3.2, 3.3, 3.4 3.5, 3.6, 3.7, 3.8, 3.12 and 3.16**
B.1. PCB Manufacturers	PCB Manufacturing	-Rigid boards, flexible, rigid-flex, etc.	**3.1, 3.2, 3.3, 3.7 and 3.10**
B.2. Harnesses, Wires and Cables subcontractors	Manufacturing, standard processes and testing	-Wires / Harnesses -Wired mechanical Assemblies	**3.1, 3.2, 3.3, 3.7, 3.8 and 3.11**
B.3 Printed Wiring Assemblies subcontractors	Production, standard processes and testing	- Printing Wiring Assemblies (PWA /CCA)	**3.1, 3.2, 3.3, 3.7, 3.8 and 3.12**
C. Special Processes	Chemical Conversion Anodizing, Passivation, NDT, Painting, soldering, welding, etc.	- Mechanical parts surface treated -Non-destructive testing	**3.1, 3.2 and 3.4**
D. Distributors	Storage and distribution	- Raw materials - Electronic and mechanical components	**3.5 (Raw material) and 3.14**
D1. Official Distributors	Storage and distribution	- Raw materials - Electronic and mechanical components	**3.5 (Raw material) and 3.14**
D2. Stockists / Dealers	Storage and distribution	- Raw materials - Electronic and mechanical components	**3.5 (Raw material) and 3.14**
E. Calibration Services Supplier	Calibration and certification of equipment according to standards	- Measurement Equipment. - Test Equipment used to verify condition of manufactured products	**3.13**
F. Testing Suppliers	Testing to products supplied by customer	- Items verified by test “In-circuit", "Flying and Probe", etc.	**3.13**
G. Subcontracted Software	Design and development V&V activities	– Subcontracted Software – Unit Test	**3.9 and 3.15**
H. Subcontracted Hardware	Design and development V&V activities	– Subcontracted Components, Equipment or Services	**3.10, 3.11, 3.12, 3.13, 3.14 and 3.15**

Table 1 Applicability of Requirements per Vendor Classification.

1.4. Reference Documents

ANSI/ESD 20.20 Protection of Electrical and Electronic Parts, Assemblies and Equipment (excluding Electrically Initiated Explosive Devices)

AQAP/PECAL 2110 NATO Quality Assurance Requirements for Design Development and Production.

AQAP/PECAL 2210 NATO Quality Assurance Requirements for Software, additional to PECAL 2110.

AQAP/PECAL 2310	NATO Quality Management System Requirements for Aviation, Space and Defense Suppliers
ECSS-Q-20	Space Product Assurance - Quality Assurance (ESA).
AS/EN 9100	Aerospace Series- Quality Management System Requirements.
IPC 6012	Qualification and Performance Specification for Rigid Printed Boards
IPC 6013	Qualification and Performance Specification for Flexible/Rigid-Flexible Printed Boards
IPC 7711 / 7721	Rework, Modification and Repair of Electronic Assemblies
IPC A 610	Acceptability of Electronic Assemblies
IPC/WHMA A 620	Requirements and. Acceptance for Cable and Wire Harness Assemblies
IPC J-STD-001GS	Requirements for Soldered Electrical and Electronic Assemblies
ISO-10012-1 / ANSI/NCSL Z540.3	Quality assurance requirements for measuring equipment
ISO 9001	Quality Systems-Requirements.
MIL-P-50884	Printed Wiring Board, Flexible or Rigid-Flex General Specification for
MIL-P-55110	Printed Wiring Board, Rigid General Specification for
MIL-PRF-31032	Printed Circuit Board / Printed Wiring Board General Specification for
MIL-STD-129	Military Marking for Shipment and Storage
MIL-STD-186F	Manufacturing process, protective finishing for army missile weapon systems
MIL-STD-1686	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (excluding Electrically Initiated Explosive Devices)
NAS 410	NAS Certification & Qualification of non-destructive test personnel
PART 145	Maintenance Organization Approval.
PART 21	Production Organization Approval.
RTCA/DO-178	Software Considerations in Airborne Systems and Equipment Certification
UNE-EN ISO 9712	Non-destructive testing - Qualification and certification of NDT personnel
UNE-EN ISO 17663	Welding - Quality requirements for heat treatment in connection with welding and allied processes
UNE-EN ISO 24394	Welding for aerospace applications -- Qualification test for welders and welding operators -- Fusion welding of metallic components

1.5. Terms, definitions and acronyms

ISO 9000 and AS/EN 9100 terms and definitions are applicable to this document. As well the next ones:

ABL As built List.

CAR Corrective Action Request

CCA Circuit Card Assembly (PWA)

CoC Certificate of conformity – Document signed by the supplier, which states that the product conforms to contractual requirements.

Disposition Immediate Action to be done to solve a non-conformity.

DPA Destructive Physical Analysis

ECM Procurement Specification

ESA European Space Agency

ESD Electrostatic Discharge

FAI First Article Inspection

GO Oesia Group

GQAR Government Quality Assurance Representative

IPC Association Connecting Electronics Industries (former "institute for Interconnecting and Packaging Electronics Circuits)

Inspection at source Test of purchased products to verify the integrity and conformity with requirements and specifications before delivering at supplier premises. The inspection at source of a finished product may be carried out immediately before delivering and also manufacturing to ensure the subassemblies conformity that may be hidden and therefore impossible to detect.

ITAR International Traffic in Arms Regulations

KPI Key Performance Indicator

Mayor No conformity It is a no conformity that affects in an adverse way to one of the following characteristics: security, health, benefits, surgical operation, reliability, maintainability, interchangeability, appearance (when is a factor) and change in the material.

Minor No conformity Any No conformity other than Mayor.

MIL-STD USA DoD Military Standard

MRB Material Review Board

M&TE Measurement & Test Equipment

MSDS Material Safety Data Sheet

NADCAP National Aerospace Defense Contractors Accreditation Program.

NC Non-Conformance

NDT Nondestructive Test

OQD On Quality Delivery

OTD On Time Delivery

PCA	Printed Circuit Assembly
PCB	Printed Circuit Board
PO	Purchase Order
PWA	Printed Wiring Assembly (CCA)
QAR	Quality Assurance Responsible
SCAR	Supplier Corrective Action Request
SOW	Statement of Work
SPC	Statistics Process Control
Sub-supplier	Provider of products to the Supplier
X-OUT	Percentage of defective boards that are part of a panel array of boards.

1.6. Order of precedence

The following order of preference is applied in case of controversy between this document and other relevant documents:

a) PURCHASER Drawings, specifications, invoked standards, or approved concessions or deviations if apply.
b) Purchase Order (PO)
c) Contract, Supply Framework Agreement and Statement of Work (if any)
d) This document
e) Other standards of Terms and Conditions (Annex 4 Purchasing General Conditions, etc.).

2. GENERAL REQUIREMENTS

The criteria used for supplier approval are based on the supplier certification in accordance with the following standards.

• All suppliers (minimum)	ISO 9001
• Design (Security / Defense /Aerospace)	AQAP 2110 – AS/EN 9100
• Manufacturing (Security / Defense /Aerospace)	AQAP 2120 – AS/EN 9100
• Distributor (Defense / Aerospace)	AQAP 2110 AS/EN 9120
• Maintenance (Aerospace)	EMAR 145 – AS/EN 9110
• Software	AQAP 2210 – CMMI
• Special Processes	NADCAP

Suppliers not holding any accredited certification but considered strategic to the business will be approved based on the level of conformance to the requirements listed in this section and a specific surveillance plan will be applied based on the risk assessment.

2.1. Quality System

The SUPPLIER shall provide and maintain a system, which will assure that all supplies and services submitted for acceptance conform to purchase order requirements, whether manufactured or processed by the SUPPLIER, or procured from subcontractors. By virtue of submittal, the SUPPLIER certifies that all such requirements have been met or that the PURCHASER has accepted all non-conformances in writing.

This system shall be documented and be available for review by a PURCHASER representative prior to the initiation of production and throughout the life of the purchase order.

GO is committed to continuous improvement and encourages its suppliers to identify and control key processes, which assist in their implementation of continuous improvement.

The SUPPLIER shall notify significant changes such as a change of location, management, a change of quality management representative, approval status, capabilities manufacturing processes etc. to PURCHASER Quality Assurance Responsible (QAR).

2.2. Organization

The SUPPLIER's organization shall have a nominated person who shall have defined authority and responsibility for ensuring that the requirements of the quality system are implemented.

2.3. Contract review

The SUPPLIER shall undertake sufficient planning to ensure that the PURCHASER specified requirements are fulfilled.

Prior to a quotation or acceptance of a purchase order, the SUPPLIER shall ensure:

a) that the proposed order, or definitive order and supporting documentation is comprehensible and complete,

b) that there is the necessary capability and capacity to perform the work contracted including all verification activities by trained personnel,

c) That the quality system employed will satisfy ALL the requirements.

2.4. Audits, inspections, and reviews.

When required in the purchase order/contract, the SUPPLIER shall provide rights of access to the PURCHASER, customers, and regulatory/MoD representatives to perform audits, inspections, and reviews at the supplier's facilities. The SUPPLIER shall:

a) Ensure that each audit/inspection/review schedule is compatible with the availability of the items required for the audit/inspection/review, e.g., hardware, drawings, procedures, manuals, reports, analysis, hardware configuration identification data, Quality assurance records, routings, process procedures, and specifications.

b) Designate one supplier`s representative as the focal point and individual responsible for the Supplier for each audit/inspection/review.

c) Provide the necessary facilities, personnel, and consumable materials to support the audits, inspections, and reviews.

d) Sufficient notice shall be given by the PURCHASER prior to any required activities, which may include surveys or audits (including sub-tier suppliers and processors) either before or after issue of a Purchase Order Agreement.

2.5. PURCHASER supplied product/tools/gages

The SUPPLIER shall verify, upon receipt, all goods supplied by the PURCHASER. Goods supplied by the PURCHASER shall be placed in a bonded store and maintained to a serviceable level and only be used for fulfilment of Purchase Orders

Material supplied by the PURCHASER to be used in supplier’s delivered product shall be to the following:

a) Inspect upon receipt for evidence of the PURCHASER acceptance, shipping damage and lot identification.

b) **Material traceability shall be maintained throughout the manufacturing process, assuring that items manufactured by the SUPPLIER are identifiable to the material lot number provided by the PURCHASER**.

PURCHASER furnished test equipment shall be handled and maintained in a manner to prevent damage or deterioration and shall be in a calibrated state. When such equipment is due for calibration, or the equipment is considered faulty, the SUPPLIER shall inform the purchaser.

The SUPPLIER shall perform the following when the PURCHASER furnishes tools/gages:

a) Inspect, upon receipt, to detect damage in transit and assure completeness, presence of operating instructions and a valid calibration status, as applicable.

b) Provide adequate protection to preclude damage or deterioration during use, handling and storage.

c) Provide periodic calibration of gaging in accordance with the PURCHASER instructions or request the PURCHASER to perform calibration at least 30 days prior to the expiration date shown by the calibration status. When deficiencies occur, notify the PURCHASER buyer immediately.

d) Support periodic audits of the PURCHASER-furnished tools/gages.

2.6. Control of measuring and test equipment

The SUPPLIER shall maintain a documented system for the control of equipment used in the inspection and acceptance of delivered items, including tooling, etc., used as inspection media. The equipment must be capable of providing accurate measurement and their calibration sources traceable to National Standards.

Test and measurement equipment used to determine the acceptability of delivered items shall be maintained in accordance with **ISO-10012-1** or **ANSI/NCSL Z540-1-1994**, "Calibration system Requirements. Procedures shall define the requirements for build, verification, certification and use of Special Test Equipment.

An individual record shall be maintained for each piece of test/measuring equipment and calibration standard. Records shall include, as applicable, item identification, calibration interval, date calibrated, calibration due date, calibration source or procedure used, calibration technician identification, calibration results and any actions taken.

All test/measuring equipment and calibration standards shall be labelled to indicate **calibration status, including the calibration due date and identification of the authorized calibration source/technician**. Items with limited use shall be readily recognizable. The system shall describe how calibration status is identified when physical labelling is not practical. Tamper resistant seals shall be used to protect electronic equipment calibration adjustment controls which are accessible to the operator.

All test and measurement equipment used during acceptance and release testing, or final inspection stages of product, shall be recorded and logged with the test or inspection results, together with a statement to the effect that all such test equipment has valid calibration certification.

2.7. Production and process control

The SUPPLIER shall maintain a system for identifying the inspection status of supplies. Identification may be accomplished by means of stamps, tags, routing cards, move tickets or other methods.

All work affecting the quality of supplier's product(s) shall be prescribed in clear and complete documented instructions. The supplier's manufacturing, inspection and test planning shall include the sequence of operations to be performed, including all inspection, test and process control points. Upon request, the SUPPLIER shall submit a copy of supplier's planning and/or associated work instructions to the PURCHASER two weeks prior to starting fabrication.

All such planning shall be made available to the PURCHASER representatives for review at the supplier's facility.

Inspection and testing shall be documented in clear, complete and current instructions, including accept/reject criteria. The instructions shall assure inspection and test of subcontracted supplies, materials, work in process and completed articles, as necessary, to assure compliance with the purchase order.

The SUPPLIER shall maintain records of all inspections and tests. The records shall indicate the nature and number of observations made, the number and type of deficiencies found, the quantities approved and rejected, and the nature of corrective action taken.

SPC techniques, including control limits and control charts shall be used, when appropriate. Control limits must be established statistically or by other methods which are based upon the documented history of the process capability.

2.8. Non-conforming material control

The SUPPLIER shall establish and maintain a system for controlling nonconforming material including procedures for identification, segregation, and control of reworked and repaired items. All nonconforming items shall be positively identified to prevent unauthorized use, shipment and intermingling with conforming items.

The SUPPLIER shall take prompt action to correct conditions which have resulted or could result in the submission to the PURCHASER of items and services which do not conform to purchase order requirements.

No “non-conforming material disposition (MRB)” authority is granted to the SUPPLIER for the PURCHASER proprietary designs. Requests for authorization to do repair shall be requested through the appropriate purchaser contract representative. Disposition time by the PURCHASER shall vary with the severity of the non-conforming and the required analysis.

2.9. Change Control

For items supplied under PURCHASER specifications, SUPPLIER shall make no changes in designs, processing methods, or other factors specified by procurement documentation without prior notification and authorization by PURCHASER Procurement.

For those COTS components defined as critical for the PURCHASER, the SUPPLIER shall not make any design, method, process change, or other factors as SW, HW or FW that could modify the product without previous notification and authorization of the authorized representative of the PURCHASER. These components shall be identified in the request for quotation and/or purchase order.

The supplier’s inspection system shall assure that the applicable drawings and specifications required by purchase order are used for manufacturing, inspection and testing. Obsolete drawings, specifications and procedures shall be removed from the work area.

2.10. Concessions/ Production Permits

If an application to allow acceptance of non-conforming product by concession/ production permit is required, it shall be made formally to the purchase order originator at the earliest manufacturing stage.

Only on approval of a concession/production permit may product be delivered. Any acceptance of a nonconforming item shall not be considered a precedent for future actions. Copies of all non-conformance forms approved by the PURCHASER shall accompany the shipment of nonconforming items.

NONCONFORMING ITEMS SHALL NOT BE SHIPPED UNLESS SPECIFICALLY AUTHORIZED BY THE PURCHASER.

2.11. Documentation, Data and Records

Unless otherwise specified, all records related to the manufacture of delivered products shall be maintained for a minimum of **five years** after purchase order completion. Copies of these records shall be submitted to PURCHASER upon request. Once this period is over, the SUPPLIER will make available these records for the PURCHASER that reserves the right to retain the records during the appropriate time.

These records shall include as a minimum, contract review records, materiel certificates of conformity, manufacturing planning layouts, inspection / test reports including FAI reports, calibration data, audit reports, nonconformance and corrective action data, SPC results, calibration records which include ESD special area maintenance checks, personnel training and competency records and evidence of sub-tier supplier selection and control.

Unless otherwise specified, drawings, specifications, standards, and document listings shall be the issue currently in effect on the date of the Purchase Order.

The SUPPLIER shall note the purchase order, part number and serial number(s), where applicable, on all submitted documentation. Revision letters shall be included.

All submitted documentation, including signatures and stamps, must be legible. Documents requiring corrections shall comply with the following requirements:

- Each error must be lined through once.
- The correct information must be entered near the error.
- Each entry must be initialed / stamped and dated.
- Use of correction tape / fluid is prohibited.

If the SUPPLIER is not in a position to continue to retain these records, they must be offered to the PURCHASER for retention.

2.12. Rejects and Corrective Action Request (CAR)

Upon receipt of material returned due to a nonconforming condition, the SUPPLIER shall validate the reason for the **return**, whether or not it was determined to be the SUPPLIER's responsibility. The SUPPLIER may, at his option, rework, replace or partially replace the material, as required, to return it to a conforming condition.

After rework/repair action has been carried out, the SUPPLIER shall include a Rework/Repair Report or to answer the non-conformance report (NCR) with each invoiced material shipment to the PURCHASER. The report shall summarize the Supplier's evaluation of the non-conformance, outline the rework/repair action taken, list the subsequent acceptance tests performed, and document the acceptance test results. In the event the nonconformance cannot be substantiated, the action taken is: "No Work Done."

The SUPPLIER shall respond to Requests for corrective action. Supplier’s response to such request shall be timely and must include **the root cause of the problem**, statement of the **action taken to preclude a recurrence**, and the effectively of the action. The PURCHASER shall request an 8D report depending on the criticism of the problem, which will be fulfilled by the SUPPLIER.

In case of defects in material and/or workmanship and/or design that could not be revealed by the PURCHASER in a reasonable inspection after delivery ("Latent Defects"), the Warranty Period shall begin upon the day that such Hidden Defect is discovered by the PURCHASER and notice is sent to the SUPPLIER.

When PURCHASER Source Inspection is a Purchase Order requirement, the SUPPLIER shall obtain the signature of the PURCHASER representative.

2.13. Delivery and Certificate of Conformity

Unless otherwise stated in the Purchase Order / Specification / Drawing, cleaning and packaging shall be in accordance with “best commercial practices”.

The SUPPLIER shall label or clearly mark one end and one side of each shipping container or package with the notation “Caution” and the **special handling or environmental requirements for the item,** such as “**STORES, DO NOT OPEN, OPEN IN CLEAN ROOM ONLY”.**

Components with MSL must comply with standard IPC/JEDEC J-STD-033 in its latest revision.

When required in the Purchase Order/Contract, the SUPPLIER shall provide a **delivery data package** consisting of the following:

- As built list
- Certificate of Conformance
- Copy of Shipping Document

When required by the purchase order/ contract, the delivery documentation shall include a **Certificate of Conformity (CoC)**, signed by an authorized company representative, which states that the material, parts or services furnished to the PURCHASER on this contract comply with contractually specified requirements. Substantiating, objective evidence of contract compliance must be maintained by the SUPPLIER and made available for review by an authorized PURCHASER representative, at any time, for a period of at least five (5) years after product delivery. The CoC shall include the following or similar text.

"Certified that the whole of the supplies detailed herein have been inspected and tested by our Inspection organization and, unless otherwise stated above, conform in all respects to the specification(s), drawing(s) and sub-contract order relative thereto."

The CoC does not require the SUPPLIER to perform special tests/inspections for the only purpose of substantiating the certification. However, the CoC must guarantee that, if tested/inspected to the requirements of the procurement specification(s), the furnished product(s) will meet minimum contracted requirements.

For all **Aerospace items**, the Certificate of Conformity shall also assure that all materials, manufacturing processes and associated workmanship are of the highest quality standards. If the SUPPLIER is unable to supply the contractually specified items with a quality level which is equal to or greater than that specified, the SUPPLIER must immediately notify the PURCHASER Subcontract Administrator of that fact. The CoC must accompany the invoiced shipment of the product(s).

The next table contains the material type and the applicable requirements:

Material Type	Description / Ambit	Requirement
Type I	Military and/or aerospace grade components, materials, and substances	Manufacturer CoC
Type II	COTS with traceability	Valid Traceability
Type III	COTS without traceability	No Traceability
Type IV	Components manufactured under specification or drawings (BTP).	Manufacturer CoC
Services	Services such as laboratories, testing, calibration, consultancy, etc.	No Traceability

Table 2 Material type and the applicable requirements

Valid content of CoC:

The **Manufacturer CoC** must include at least the following information:

- Unique number of certificate.
- Name of Manufacturer.
- Address of Manufacturer.
- Consignee. The consignee is the PURCHASER when the purchase is directly to the manufacturer and the supplier when the purchase is made to a dealer or an approved supplier by the PURCHASER.
- Date of issuing the CoC.
- Item reference (Manufacturer Part Number).
- Applicable specifications and drawings (only for component types 1 and 4).
- Batch or Data Code, or Serial Number.

- Deviations/Waivers (only for component types 1 and 4).
- QA responsible name, position and signature. Handmade signature is preferred although preprinted signature is valid and recommended to be accompanied by a QA stamp.

The **CoC with traceability to Manufacturer** must include at least the following information:

- Unique number of certificate.
- Name of Manufacturer.
- Address of Manufacturer.
- Address of Consignee: the PURCHASER (always).
- Date of issuing the CoC.
- Item reference (Manufacturer Part Number).
- Applicable specifications and drawings (only for component types 1 and 4).
- Batch or Data Code, or Serial Number.
- Deviations/Waivers (only for component types 1 and 4).
- PURCHASER Purchase Order.
- QA responsible name, position and signature. Handmade signature is preferred although preprinted signature is valid and recommended to be accompanied by a QA stamp.

Valid Traceability

The required traceability must include at least the following information.

- Component Reference (Manufacturer Part Number).
- Name of Manufacturer.
- Data Code or Batch Number or Serial Number.

This requirement applies to electronic, electric components and raw material. Other components and mechanical components as guides, brackets, screws, etc. do not require Data Code or Batch Number or Serial Number. In cases where it is not possible to trace with Data Code or Batch Number or Serial Number, it is recommendable to trace to the manufacturer through the documentation (document number, CoC, etc.).

Where applicable, the supplier shall furnish, with each unit, a legible and reproducible copy of the **"as built part list",** identifying all part numbers, configuration, serial numbers (when required), batch control numbers, and quantities.

Failure to deliver dispatch paperwork and certificate of Conformity or to meet the above requirements will delay the receipt and payment process and could result in goods being rejected.

No traceability

In case traceability is not required, the supplier will deliver as minimum the delivery note in which the material delivered, and supplier are indicated.

2.14. Access to premises

When required by the purchase order/contract, the SUPPLIER shall provide rights of access to the PURCHASER, customers and Civil Aviation or regulatory or MoD representatives. The access to supplier's premises shall be allowed for the purpose of observation, audit or inspection of any work and pertinent documents relating to the order. The SUPPLIER will be required to provide adequate accommodation and/or services such that the representative can conduct his official duties.

If required, the SUPPLIER shall insert PURCHASER surveillance points in the supplier's planning and not proceed beyond those points without PURCHASER authorization.

The SUPPLIER shall notify the PURCHASER QAR at least **five days** prior to the start of any processing or manufacturing in conjunction with this purchase order/contract and **48 hours** in advance of the time that the goods are available for review.

2.15. Batch traceability

The required traceability must include at least the following information.

- Component Reference (Manufacturer Part Number).
- Name of Manufacturer.
- Data Code or Batch Number or Serial Number.

a) **Raw Material.** The SUPPLIER shall mark each individual item and applicable documentation (i.e., test report, shipping report, or certification) to show clear traceability to lot, heat lot, or batch number. Unless otherwise directed by this contract or the specification, when the size of the item does not permit marking of individual items. The SUPPLIER will label each package or box furnished.

b) **Manufactured Goods.** The SUPPLIER shall mark each item and applicable documentation (i.e., test reports, shipping reports, or certifications) to show clear traceability to the manufacturing lot or batch number. (Note: It is not necessary to provide traceability for the detail parts that make up the end item.) Unless otherwise directed by this contract or the specification, when the size of the item does not permit marking of individual items, the SUPPLIER will label each package or box furnished.

Suppliers of machined or sheet metal parts shall include in documentation the Lot or Batch Number in case they are manufactured in batches.

2.16. Handling of ESD sensitive items

ESD sensitive items require handling per **ANSI/ESD 20.20** “Protection of Electrical and Electronic Parts, Assemblies and Equipment (excluding Electrically Initiated Explosive Devices” or **MIL-STD-1686** “Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (excluding Electrically Initiated Explosive Devices)”.

Packaging shall be clearly identified in accordance with MIL-STD-129 as containing ESD sensitive materials. All items shall be packaged in ESD protective bags, tubes, or film.

2.17. Sampling

The use of sampling plans does not relieve the SUPPLIER of responsibility for meeting all contract product requirements. Unless otherwise specified in applicable drawings/specifications, when applicable, sampling shall be in accordance with the **method C=0 Sampling Plan (Nicholas L. Squeglia) with Associated AQL:**

Characteristic Classification	Associated AQL
Critical	100%
Major (Class 1)	1.5
Medium (Class 2)	2.5
Minor (Class 3)	4.0

Table 3 Characteristic Classification

	AQL Level		
	1,5	2,5	4
Lot Size	Sample Size		
2-8	*	5	3
9-15	8	5	3
16-25	8	5	3
26-50	8	7	7
51-90	13	11	8
91-150	19	11	9
151-280	21	18	11

Table 4 Nicholas Squeglia

* Indicates that all the lot must be inspected.

No sampling system satisfying these requirements is allowed to interpret the term "Acceptable Quality Level" (AQL) as some non-zero fraction defective is acceptable. Any defective unit(s) of product **shall not be knowingly accepted by sampling plans.**

2.18. Identification of shelf life/temperature sensitive materials

Each item, package, or container shall reflect the specification, drawing, nomenclature, or other design description required by Purchase Order. Cure or manufacturing dates, assembly dates, expiration dates, temperature limits, compound number, and manufacturing identification will be recorded on the certifications and shipping documents, as appropriate.

For products delivery with less than **2/3 shelf-life** PURCHASER approval is necessary. Temperature-sensitive materials shall be maintained within the limits prescribed in the applicable document during storage and shipment.

Material required to be maintained in special temperature conditions requires special temperature labels to be attached to exterior of each package. Label shall reflect the words **"temperature sensitive material"** and the **maximum material storage temperature allowed.**

2.19. Vendor Rating

SUPPLIER's delivery time and quality performance will be monitored through KPIs. Failure to maintain an acceptable standard shall result in removal form the Approved Suppliers List.

The main quality metrics to monitor suppliers are:

On Quality Delivery (OQD)

This is a measure based on the quality of the material delivered (including its documentation). This KPI is calculated as being the percentage of units that do pass the quality validation tests performed at incoming inspection. The objective is 98%.

$$\text{OQD}\ (\%) = \frac{\text{Number of lots/batches accepted in an assessed period}}{\text{Number of lots/batches delivered in an assessed period}} \times 100$$

On Time Delivery (OTD)

This is a measure based on the punctuality of the deliveries. This indicator reflects the percentage of the deliveries received into the agreed time-window. The objective is 98%.

$$\text{OTD (\%)} = \frac{\text{Number of planned deliveries done on time in an assessed period}}{\text{Number of deliveries planned to be done in an assessed period}} \times 100$$

Supplier Corrective Action Request (SCAR) Reply
This is the percentage of claim or rejection reports replied formally with corrective/preventive actions and root cause analysis. A batch is non-conform when the batch is rejected totally, partially, from the Manufacturing line or accepted with deviation not previously accepted by the PURCHASER. The objective is 100%.

$$\text{SCAR (\%)} = \frac{\text{Number of SCAR replies in an assessed period}}{\text{Number of non-conformance batches in an assessed period}} \times 100$$

The assessment of indicators and metrics will be used by Quality Department to create the Global Assessment of the SUPPLIER.

2.20. Mandatory occurrence reporting

Mandatory Occurrence Reporting is a Civil Aviation regulatory requirement. The regulations require that the civil aviation authorities be advised within 72 hours of being discovered, any incident, product defect or malfunction of a hazardous or potentially hazardous nature, which could endanger aircraft, aircraft occupants, or any other person or property.

The SUPPLIER's Quality Manager shall inform the PURCHASER Quality Manager immediately a situation is discovered which could have such an effect. Such matters will be referred to the PURCHASER Airworthiness Board for consideration. Matters for reporting may vary but the following situations should be advised to the PURCHASER:

- Non-Conforming/Defective Item or Material - The SUPPLIER notes a non-conformance or defect in an item or material prior to supply and it is believed a similar non-conformance may exist in items or materials previously supplied to the PURCHASER or direct to a PURCHASER customer.

- Repair and Overhaul - The SUPPLIER, carrying out repair and overhaul, identifies a defect or occurrence and considers that items containing similar defects may have been previously supplied to the PURCHASER or direct to a PURCHASER customer.

- Information for External Sources - The SUPPLIER has been advised that items or materials supplied have been subject to mandatory occurrence reporting by another customer and that the same items or materials have been supplied to the PURCHASER.

2.21. Environmental Requirements

The PURCHASER shall ensure full compliance of its activities and products to all applicable national and international laws and regulations and require to all the suppliers to meet the environmental legislation as expressed in the environment Policy.

- **The SUPPLIER shall take into account the DIRECTIVE 2011/65/EU** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain **hazardous substances in electrical and electronic equipment** (**ROHS 2)**

- **In accordance to the REGULATION (EC) No 1907/2006** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorization and

Restriction of Chemicals (**REACH**), the SUPPLIER shall communicate the use of hazardous chemicals (SVHC) as listed in the ECHA http://echa.europa.eu/es/candidate-list-table when such chemicals are presents in the supplied articles in a proportion greater than 0.1% w/w.

- The equipment or materials supplied shall not contain radioactive materials or use other sources of ionizing radiation.

- Other regulations that the SUPPLIER shall report to the PURCHASER about compliance are:

  - ❑ New Safety of Life at Sea (SOLAS) Regulation Chapter II-1 - Construction - Subdivision and stability, machinery and electrical installations
  - ❑ MSC.1/Circ.1379 y MSC.1/Circ.1426/Rev.1 regarding "new installation of materials containing asbestos."
  - ❑ Halogen regulation according to the European Normative IEC 61249-2-21 whose halogen maximum levels are:
    - Bromine (Br) < 900 ppm
    - Chlorine (Cl) < 900 ppm
    - Br + Cl < 1500 ppm
  - ❑ ODS Ozone-Depleting Substances Regulation (EC) No 1005/2009
  - ❑ Persistent organic pollutants (POPs) Regulation (EU) No 2019/1021
  - ❑ Biocidal Products Regulation (BPR, Regulation (EU) 528/2012)
  - ❑ F-GAS Fluorinated Greenhouse Gases Regulation (EU) No 517/2014

The SUPPLIER shall communicate to the PURCHASER the application the above directives and the use of hazardous and banned substances in their products. SUPPLIERS **shall in turn ensure that all their suppliers contributing to the PURCHASER products also comply with all the requirements of this section.**

Furthermore:

- The SUPPLIER shall comply with the environmental national or international directives regarding electrical and electronic waste equipment and the **Directive 2012/19/EU** of the European Parliament and of the Council of 4 July 2012 on Waste Electrical and Electronic equipment (**WEEE) and request compliance to their suppliers.**

- The SUPPLIER shall report to the PURCHASER the use of any hazardous substance and will provide a **Material Safety Data sheet (MSDS)** of any identified hazardous substance. In case of hazardous substances supply, it is mandatory to supply the Material Safety Data Sheet (MSDS) with the goods.

- The SUPPLIER will commit the environmental requirements indicated on the website: https://grupooesia.com/en/suppliers/

2.22. Conflict Minerals

The SUPPLIER shall notify, based on the requirements of the Dodd-Frank Act, Section 1502 – Securities and Exchange Act of 1934, 17CFR on conflict minerals and on the REGULATION (EU) 2017/821 approved by European Parliament and Commission (about the laying down supply chain due diligence obligations for Union importers of tin, tantalum and tungsten, their ores, and gold originating from conflict-affected and high-risk areas), the use in the MATERIAL supplied the PURCHASER of the following elements: Columbite-tantalite (coltan), Cassiterite, Gold, Wolframite (Tungsten), or their derivatives (together: "Conflict Minerals"):

- If such MATERIAL contains any "Conflict Minerals" SUPPLIER is kindly requested to confirm in writing the PURCHASER as far as SUPPLIER knows or reasonable believes, based on a reasonable country of origin inquiry (RCOI):

  a) That the "Conflict Mineral" is from recycled, or scrap sources and SUPPLIER also discloses this determination in writing to the PURCHASER and briefly describes the RCOI and its results, or

b) That the “Conflict Mineral” does NOT originate from the Democratic Republic of Congo or an adjoining country to it, as Angola, Zambia, Tanzania, Burundi, Rwanda, Uganda, South Sudan, Central African Republic, Congo (together “covered countries”) and SUPLIER also discloses this determination in writing to the PURCHASER and briefly describes the RCOI and its results.

- Should SUPPLIER not be able based on an RCOI to determine and confirm above points a) or b), SUPPLIER is kindly requested to describe the PURCHASER in writing and in the detail the following:

  a) Which MATERIAL/single component/s of MATERIAL is/are affected?
  b) Which “Conflict Mineral/s” is /are contained in the MATERIAL/components
  c) Which is the source of the “Conflict Minerals” contained in the MATERIAL/components?

In any case, **the SUPPLIER shall fully commit the above normative mentioned.**

2.23. ITAR License

Prior to the delivery of any material under ITAR license, the SUPPLIER shall provide the ITAR license to ensure the logistic process is not blocked with enough time to avoid any delay in the lead time of the mentioned material.

2.24. Fight against Counterfeit Material

Counterfeit Material is the Material whose origin, age, composition, configuration, certification status or any other characteristic (including the fact that it may have been previously used) has been falsified by:

a) Misleading marking of the material, its labeling or packaging.
b) Misleading documentation.
c) Any other form, including the omission of information.

Exceptions are cases where it has been demonstrated that the misrepresentation was not intentionally made by an external supplier or supplier within the supply chain.

The SUPPLIER shall establish and maintain a counterfeit parts or material control and control plan to ensure the authenticity of the supply. The purpose of the supplier's plan shall be to develop a robust process to prevent and control the delivery of counterfeit or identified counterfeit goods.

3. SPECIFIC REQUIREMENTS

3.1. FIRST ARTICLE INSPECTION (FAI)

When requested by the Purchase Order, the SUPPLIER shall complete a First Article Inspection, and **provide results to THE PURCHASER, before delivering** any new part assigned to him.

The first “production” item or a "first batch" representative item (or more if required by the purchase order) shall be 100% inspected/tested to verify compliance with all drawing/specification requirements.

FAI report to be supplied shall include, but not limited to, the following (where applicable):

a) Reference of the drawing defining all physical and measured dimensions,
b) Detailed parts list for each unit (if an assembly),
c) Detailed parts drawings reference as defined in a),
d) Circuit diagrams references (if applicable),
e) Acceptance test procedures reference and test results,
f) Environmental Stress screening test procedures references and results (burn-in and vibration),
g) Production processes documentation reference,
h) Other data as may be required to support the above,
i) Material and finish data, supported by Certificates of Conformity,
j) A copy of the batch history/routing cards with all operations duly stamped up and endorsed with a final inspection stamp,
k) Evidence of traceability of parts/traceability reports,

Evidence of PURCHASER's source inspection at supplier premises, when applicable, shall be indicated by source inspection stamp, or signature, on Supplier's FAI record for each dimension verified.

FAI Changes

FAI records are updated to include the delta changes whenever there is a change to the drawing, specification, supplier or a manufacturing process that could result in a change to the product configuration.

Delta first article inspection

A Delta change refers to a minor change that does not affect all the part. In this event most of the manufacturing process remains unchanged and the supplier needs only to update the existing FAI record for that portion of the part affected by the change. When the manufacturing process or part configuration are changed from the way the original FAI part and its record were created, the SUPPLIER must re-evaluate the FAI record. If the change could be reasonably be seen as affecting a change to the part configuration, the existing FAI record becomes invalid and must be updated to account for that change. In some cases, a new complete FAI record may have to be created.

When a new part number has been created for an existing product and there has been no other change to the part/assembly or to its manufacturing process, the original FAI record need only be annotated to show the part number change.

The FAI record will be updated or replaced when the part configuration is affected by a change to the **manufacturing process**. The following examples include some but not all situations where this may be the case:

- The engineering design is changed.
- The Purchase order, Purchase contract, Supplier Specification Plans are changed.
- The part, process or a portion of the fabrication/assembly is purchased from a different supplier.
- The module definition is not the same as the original sub-assembly call-out.
- The part is moved for a conventional machine to an NC machine.
- The part/assembly is to be produced from an assembly tool that was deactivated or moved.
- A component of the assembly is added, removed, revised or otherwise changed in configuration.

As well, a FAI will be performed in case it is required and more than 2 years have elapsed from the restart of the production to the end of the last production operation.

The certificate of Conformity shall be endorsed to show that either a full or Delta First Article Inspection has been performed.

The Standard **AS/EN9102** is recommended to be followed as guide for the FAI, unless specified in the Purchase order or other contractual documents as a requirement.

3.2. Procurement Control by the SUPPLIER

For PURCHASER proprietary designs, no Purchase Order may be further subcontracted under PURCHASER specifications. The PURCHASER representative quoted on the specific Purchase Order shall in the first instant be contacted if sub-contracting is necessary.

The **SUPPLIER shall flow down to sub-tier suppliers the applicable requirements in the purchasing documents**, including key characteristics where required.

3.3. PURCHASER assigned Serial Numbers

When required by the Purchase Order/Contract, SUPPLIER end items shall be identified with provided serial numbers, as defined in applicable drawings/ specifications. Serial numbers shall provide full traceability to all material, fabrication, assembly, inspection and test documentation.

If not defined in the specifications, Serial Numbers shall be in the next format **ZZYYWWNNN**:

- **ZZ**: 2 first digits indicating the manufacturer (this identification must be agreed upon by the PURCHASER, which will oversee keeping the record).
- **YYSS**: 4 numeric digits indicating the year YY and week of manufacture WW.
- **NNN**: 3 sequential digits identifying the part within the manufacturing lot, starting with 001.

3.4. Special Processes

The next manufacturing processes are considered as Special Processes:

- Special Process Standards Chemical Processing – In accordance with MIL-STD-186F
- Special Process Standards Heat Treatment – In accordance with MIL-STD-186F or UNE EN ISO 17663
- Special Process Standards NDT – In accordance with UNE EN ISO 9712 or NAS 410
- Special Process Standard Soldering – In accordance with MIL-STD-186F or IPC J-STD-001GS

- Special Process Standards Welding – In accordance with UNE EN ISO 24394
- Special Process Paint Application – In accordance with international standards or specific procedures of the PURCHASER.

For items under PURCHASER specifications, special processes shall be performed **only by approved sources by the PURCHASER and/or accepted certifier entity (as NADCAP or AECMA-PRO)**. Other approved sources may be obtained from the PURCHASER. Use of PURCHASER approved suppliers does not relieve the SUPPLIER of the responsibility to meet all purchase order requirements.

The SUPPLIER shall include, with each shipment**, certificate(s) identifying the special process**, part number (P/N), purchase order number, process specification number, identification of process method used acceptance criteria document, and evidence of acceptance. All certifications must reflect applicable document revisions. **This applies also in the case that the supplier subcontracts the special process**.

The SUPPLIER shall include radiographic reports with each hardware shipment if applicable.

When required by the applicable drawing/specification, the SUPPLIER's process control procedures, technique sheets, and/or physical samples shall be submitted for approval prior to use on production hardware. Changes also require the PURCHASER approval.

3.5. Material Test Reports

When required by the Purchase Order, a copy of the mechanical test and chemical analysis report shall be provided.

Where the sub-contractor processes raw materials (machined or metal sheet parts), the SUPPLIER shall retain originals and shall forward to the PURCHASER with the parts, the copies of the material mechanical/chemical tests and analysis reports and the raw material supplier release certificate.

The SUPPLIER shall not place purchase orders for forgings and castings on any source unless advised by the PURCHASER.

3.6. Supplier designed and fabricated inspection tools or gages

When required by the Purchase Order/Contract, the SUPPLIER shall obtain PURCHASER approval for all tools or gages which supplier designs and/or fabricates for the purpose of inspection/acceptance of the items specified in the Purchase Order.

3.7. Tool accuracy requirements

The SUPPLIER shall ensure the Measurement and Test Equipment (M&TE) used to accept or reject PURCHASER hardware are adequate for the measurement task, using the following criteria:

a) If the specification calls out the tolerance of the M&TE required to make the measurement, then M&TE is selected that will meet or be tighter than that tolerance.

b) Where the specification does not specify the tolerance of the M&TE, the M&TE used shall meet a 10:1 tolerance ratio. For example: an article with a tolerance of +/-.005 has a total tolerance of .010. 10:1 requires the use of a .001 accurate M&TE to accept or reject this specification tolerance.

c) If the required tolerance of the M&TE is not called out in the specification and **10:1** accurate M&TE is not available due to state-of the-art limitations, then the measurement is accepted only by meeting a tighter tolerance than specified. The tighter tolerance is determined by decreasing the specification tolerance by the accuracy of the M&TE used. Example: an article with a tolerance of +/-.005 has a total tolerance of .010. 10:1 requires the use of a .001 accurate M&TE for this specification tolerance. If a tool with an accuracy of .002 is used, then the

tolerance must be reduced. The reduced tolerance would be +/-.003 (the .002 tool uncertainty must be removed from both ends of the tolerance zone) this practice removes any uncertainty that might be induced by the M&TE

3.8. Inspection Data Sheet - Dimensional Report

When it is explicitly requested in the Purchase Order/Contract or drawing:

a) The SUPPLIER shall provide objective evidence with each shipment that all goods furnished under the purchase order/contract were **electrically and/or dimensionally inspected** for conformance with drawing and other purchase order/contract requirements. **Objective evidence shall consist of records of actual readings taken during the inspection of each part, with the dimension, its tolerance noted and a PASS/NO PASS field.**

b) The SUPPLIER shall identify the purchase order/contract number, part number, revision number, and when applicable, serial number on each inspection data sheet. Each inspection data sheet shall be signed by the Management Representative responsible for Supplier's inspection activity, with the title of the individual whose signature appears on the inspection data sheet and the date of the signature.

In the cases when a dimensional report is required in the drawing or in the purchase order, the inspection data sheet will contain:

- Measurements of all the critical characteristics of the 100% of the parts of the batch. In case of mechanical parts, it is considered as critical characteristic those marked with * in the drawing and/or those with a more restricted tolerance that general tolerance.
- Measurements of the rest of characteristics, according to the sampling method indicated in the section 2.17 in the rest of parts, with a minimum of one part per batch.

3.9. Software Supplier Requirements

The SUPPLIERS of software products or SW testing services shall be certified in accordance with ISO 9001, EN9100, tickIT, CMMI or another recognized standard. For aerospace programs, it shall show previous experience in applying the RTCA 178 standards.

In contracts of Software products and testing services of SW, the SUPPLIER shall develop, implement, and maintain a **Software Quality Assurance program** plan in accordance with the SOW of the contract. The plan:

- Shall include reviews, audits, inspections and evaluations of the software products and processes to determine the quality and conformance to contractual requirements.
- Shall address operating procedures and records of reviews, audits, inspections, and evaluations performed.
- Shall address and include all software quality contractual requirements.
- Shall apply but is not limited to non-deliverable software used in the supplier’s manufacturing, inspection, and/or test operations.
- Finally, shall include execution requirements, such as the loss of dynamic memory and the consumption of resources of less than 50%, both in CPU and RAM.

For the quality requirements, static code inspection tools will be used, where the thresholds of the characteristics to be checked will be defined. If the SW product is not within these thresholds, it will be considered as **non-conforming SW**.

All the SW products and services shall be submitted to the PURCHASER for approval. Any question related to the implementation of this requirement shall be addressed to the PURCHASER SW QA responsible.

3.10. PCB Supplier Requirements

Rigid Printed Wiring Board: SUPPLIER shall comply with the requirements of MIL-P-55110 (MIL PRF-31032) or IPC-6012 class 2, 3 or 3/A or DS. Compliance shall be subject to audit by the PURCHASER and/or Government representatives.

Flex and Rigid Flex Printed Wiring Boards: SUPPLIER shall comply with the requirements of MIL-P-50884 (MIL-PRF-31032) or IPC-6013 class 2 or 3. Compliance shall be subject to audit by the PURCHASER and/or Government representatives. **Group A results shall be delivered with the product**. Group B data, when required, shall be delivered to the PURCHASER; otherwise, the supplier's monthly Group B Certification shall be submitted to the PURCHASER upon completion of test and acceptance.

When released to MIL-P-55110/ MIL-P-50884, **Group A inspections results shall be delivered with the product.** Group B data, when required, shall be delivered to the PURCHASER; otherwise, the supplier's monthly Group B Certification shall be submitted to the PURCHASER upon completion of test and acceptance.

When released to IPC-6012/6013 a **test report according to Table 4-3 of IPC-6012/IPC-6012** shall be delivered with the product. Besides that, the SUPPLIER shall provide with the PCB and the documentation, the test coupon or PCB used to perform the microsection analysis and report according to the required standard on the drawing or specification. In the case that the coupon is not representative of the requirement of the standard, the PURCHASER must approve the design of the coupon previously to manufacturing.

All rigid multilayer boards and flex/rigid flex shall be electrically tested 100% to detect open and shorts. All product delivered will be free from electrical open and/or short circuits.

In general**,** the following requirements apply:

a) No delamination, blistering, measling or crazing is allowed.
b) External laminate cracks are not allowed.
c) No repair is allowed except previous approval of the PURCHASER.
d) Rework shall be communicated to the PURCHASER.
e) In case the percentage of rejected PCBs of one panel (X-OUT) is higher than 20%, the PURCHASER must approve previously the delivery of the mentioned panel.

When required by Purchase Order and/or Drawings, other high reliability specifications such as MIL, NASA, ESA shall be met.

In the case that a PCB requires a FAI, the SUPPLIER will carry out a FAI on new representative of the first production run. In case that the SUPPLIER manufactured a previous model of the same PCB in which carried out a FAI, the SUPPLIER will carry out a Delta FAI to validate the changes from the previous model. The scope of the Delta FAI shall be approved by the PURCHASER previously and shall be proposed by the manufacturer.

In the cases in which the analysis of an additional coupon is required in the specification and/or the purchase order (DPA Test or after thermal stress), the SUPPLIER will provide the test coupon or PCB micro-sectioned and the report according to procurement specification (ECM).

3.11. Cable and Harness Supplier Requirements

The SUPPLIER shall carry out the inspection according to IPC/WHCM-A-620 Class 2 or 3. All cables will be tested for shorts, continuity, and dielectric withstanding voltage.

For each lot of wire or cable in each shipment, a certified test report or copy thereof shall be included with the packing sheet. The test report shall, at a minimum, include a record of the physical, chemical, or electrical (and in the case of RF cable, electronic) inspections and tests conducted to satisfy the acceptance requirements of applicable specifications, and shall include numerical results when applicable. For cable shipments, these

requirements apply to both basic wire and finished cable. When the specification requires other inspection or test data to be reported, it shall be included in the test report.

Reports shall provide the manufacturer's name, the specification number and revision date or change letter, and other data required by the specification, and must be identified to or correlated with the lot shipped.

Unless otherwise specified, all tests, plans and procedures will be developed by the SUPPLIER and approved by the PURCHASER.

Permanent changes to Cable test procedures proposed prior to performance of tests shall be formally submitted to the PURCHASER.

Changes to Cable test procedure deemed necessary during performance of tests shall be made only with the PURCHASER approval.

Tests may be witnessed and approved/ disapproved by the PURCHASER QA or designated representative. Other customer representatives may witness tests, as deemed necessary by the PURCHASER.

3.12. Printed Wiring Assemblies (PWA) Supplier Requirements

Inspection of PWA shall be according to IPC-A-610 standard and class 2 or 3.

Rework activities shall be performed according to IPC 7711 **level of conformance H** and by a certified operator.

Repair activities shall be submitted to the PURCHASER for approval via **waiver/ deviation** and once approved the repair operation shall be performed according to an agreed IPC 7721 method with **level of conformance H** and by a certified operator.

If **Test-In-circuit or Flying Probe** is required, the fixture and the software shall be submitted to PURCHASER validation. These activities may be part of the First Article Inspection. Once the tooling and Software are validated, no change to the configuration of the tooling and Software shall be made without PURCHASER authorization.

When required by Purchase Order and/or Drawings, other high reliability PWA specifications such as **MIL, NASA, ESA,** for PWA shall be met.

3.13. Calibration and Testing Service Supplier Requirements

Calibration Service SUPPLIERS shall be accredited by the national accreditation body (ENAC, UKAS, COFRAC etc.).

All calibration certificates shall contain the measurements made, their tolerances, the uncertainty data of the measurements made, and the references of the standards used.

Testing services SUPPLIERS shall have implemented a calibration system. The SUPPLIER reference standards shall have traceability of measurement by being calibrated at an accredited calibration laboratory or a national metrology institute.

3.14. Distributor Requirements

Distributors shall assure that the raw material or articles provided are traceable to the original manufacturer documentation.

The **commercial electronic components** supplied shall be accompanied by the appropriate documentation referring to the original manufacturer and providing the full traceability data: original manufacturer data code or

batch number. If required in the PO, a certificate of conformity from distributor with full traceability data will be supplied.

High reliability and qualified components (QPL, military, space, automotive, etc.) shall be supplied always with the original manufacturer certificate of conformity (CoC) and the accompanying documentation required by the standard the component is released to.

When required by the purchase order, the SUPPLIER shall provide to the PURCHASER with evidence of the supplied product's conformity to the contractual technical specifications. For this purpose, the manufacturer's conformance documents shall be provided including, if applicable, the original airworthiness certificate, test analysis, test reports.

In case of batch splitting deliveries, copies of these documents shall be provided with each delivery.

When required by the purchase order, all deliveries of raw material provided will be accompanied by the original certificates of casting, radiographies, heat treatment, chemical and mechanical analysis, etc.

The PURCHASER shall be allowed to access to documentation of the original manufacturer under request and to audit the supply sources. Distributor documentation must be traceable to the original manufacturer documentation univocally.

Distributor certificate of conformity.

When required by the PO, the **CoC with traceability to Manufacturer of the official or the approved supplier**, must include at least the following information:

- Name of Manufacturer.
- Address of Manufacturer.
- Address of Consignee: THE PURCHASER
- COC date of issue.
- Item reference (Manufacturer Part Number).
- Applicable specifications and drawings (only for component types 1 and 4).
- Batch or Data Code or Serial Number.
- Deviations/Waivers (only for component types 1 and 4).
- Purchase Order.
- QA responsible **name**, position and signature. Handmade signature is recommended although preprinted signature is acceptable (it is recommended to be accompanied by the signatory Quality Stamp).

Traceability.

When traceability is required by the PO, the SUPPLIER shall provide the full traceability data of the supplied items including:

- Original manufacturer part number or commercial reference
- Manufacturer name
- Data code or Batch number or Serial Number

The traceability information included in accompanying documents, may be attached to the article, or marked on the article if possible.

No traceability

When nor CoC nor traceability is required, the SUPPLIER will provide a delivery note with material supplied.

3.14.1 Official or Authorized Distributor

In cases in which the purchase order requires that material must be provided by the original manufacturer, or an official distributor authorized by the original manufacturer, the SUPPLIER will provide the material according to this requirement, without the intervention of unauthorized distributors or brokers in the supply chain.

Besides that, the SUPPLIER shall accredit that is an official or authorized distributor with one of the next documents:

- Official Certificate signed by the manufacturer.
- Publication in the manufacturer website
- Authorization email send by the manufacturer and sent directly to the PURCHASER (not resent).

3.15. Subcontractor Requirements for Design and Development Services

Design and Development Subcontractor of SW or HW or both, shall be certified according to ISO 9001 as minimum, being recommendable to be certified according to AS 9100 and to have in place in the organization the applicable requirements according to AQAP 2110.

The PURCHASER shall flow down to the Subcontractor the project and quality technical specification and requirements, delivery schedule and any other requirement through a Statement of Work (SOW) that together with the applicable documentation (drawings and specification) and the contract or the purchase order shall rule all the conditions applicable to the supply of the design and development service.

The Subcontractor shall comply with all the specifications, requirements and clauses agreed in the SOW during the supply of the service under the set out in the contract or in the purchase order. In case of nonfulfillment of any requirement or clause, the Subcontractor must notify the PURCHASER in writing for acceptance or modification. If the no fulfillment is a critical requirement or clause for the supply of the service, the PURCHASER may terminate the contract or request compensation for it.

3.16. Subcontractor Requirements for Mechanical Parts

Machined parts are classified according to the criticality and functionality of such parts in the product in which they are assembled:

- Class 1: Parts considered safety critical.
- Class 2: Parts considered critical, which directly and seriously affect the main functionality of the product.
- Class 3: Non-critical parts, which require special attention during the manufacturing processes, due to the complexity of such processes.
- Class 4: Non-critical parts, which do not require special attention.

3.16.1. Class 1 Documentation

Required documentation to be delivered with each batch:

- CoC document.
- Dimensional control with AQL level of 1.5% according to the table of the **method C=0 Sampling Plan (Nicholas L. Squeglia) with Associated AQL** (see Table 4 Nicholas Squeglia of section 2.17).
- Dimensional control of 100% of the critical dimensions[1].
- Certificate of surface treatment.
- Material certificate: Inspection certificate type 3.1 according to UNE-EN 10204:2006.
- Heat treatment certificate.
- Hardness test result after heat treatment of at least one unit of the batch whenever possible. If this is not possible, the record shall be made on a specimen representative of the process. If the heat treatment was performed in batches, a hardness test record shall be made for at least one unit (or representative specimen) from each of those treatment batches.

- IPA for the first significant unit of the batch according to section 3.1.
- Visual inspection: shall be performed on 100% of the parts, checking that they are free of damage and that they have the inserts mounted.

3.16.2. Class 2 Documentation

Required documentation to be delivered with each batch:

- CoC document.
- Dimensional control with AQL level of 2.5% according to the table of the **method C=0 Sampling Plan (Nicholas L. Squeglia) with Associated AQL** (see Table 4 Nicholas Squeglia of section 2.17).
- Dimensional control of 100% of the critical dimensions[1].
- Certificate of surface treatment.
- Material certificate: Inspection certificate type 3.1 according to UNE-EN 10204:2006.
- Heat treatment certificate.
- Hardness test result after heat treatment of at least one unit of the batch whenever possible. If this is not possible, the record shall be made on a specimen representative of the process. If the heat treatment was performed in batches, a hardness test record shall be made for at least one unit (or representative specimen) from each of those treatment batches.
- IPA for the first significant unit of the batch according to section 3.1.
- Visual inspection: shall be performed on 100% of the parts, checking that they are free of damage and that they have the inserts mounted.

3.16.3. Class 3 Documentation

Required documentation to be delivered with each batch:

- CoC document.
- Dimensional control with AQL level of 4% according to the table of the **method C=0 Sampling Plan (Nicholas L. Squeglia) with Associated AQL** (see Table 4 Nicholas Squeglia of section 2.17).
- Dimensional control of 100% of the critical dimensions[1].
- Certificate of surface treatment.
- Material certificate: Inspection certificate type 2.2 according to UNE-EN 10204:2006.
- Visual inspection: shall be performed on 100% of the parts, checking that they are free of damage and that they have the inserts mounted.

3.16.4. Class 4 Documentation

Required documentation to be delivered with each batch:

- CoC document.
- Dimensional control of 100% of the critical dimensions[1].
- Visual inspection: shall be performed on 100% of the parts, checking that they are free of damage and that they have the inserts mounted.

NOTE [1]: If dimensions marked with an asterisk ("*") appear on the drawings, it is mandatory to check these dimensions in all units of the lot (100% inspection), regardless of the class, since the designer considers them critical to the design and they must be complied with. In other words, even if the class type does not require the measurement of a certain part of the lot, the measurements marked as critical must be measured in the whole lot.

END OF DOCUMENT